

REMARKS

Claims 2 to 3, 5, 7 to 51 are pending in the application. Applicant affirms the election made 1/16/2004 and withdrawal of claims 2, 3, 10-47.

Claim Rejections - 35 U.S.C. 112

Claims 1, 5, 7,-9, 48-51 stand rejected under 35 U.S.C. 112, 1st paragraph, as failing to comply with the written description requirement. Examiner objects to the introduced word "directly". The term has been removed from claim 5.

Rejection under 35 U.S.C. 103

Claims 1, 5, 7-9, 48-51 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Coleman (US 4,866,091)* and *Weber (US 5,911,245)*.

Claim 1 is canceled. Claim 5 now defines that a **single first pressure spring** is arranged in the housing between the first piezo element and a first piston end and a **single second pressure spring** is arranged between the second piezo element and a second piston end. The first pressure spring has a first end resting against the first piezo element and a second end resting against the first piston end; the second pressure spring has a first end resting against the second piezo element and a second end resting against the second piston end. The first and second piezo elements act through the first and second pressure springs on the piston that controls a flow of a pressure medium to a consumer.

U.S. 4,886,091 to *Coleman* shows two pressure springs 100,128; 106, 129 each on either side of the piston 92. The springs 100, 106 act as drive members and the springs 128, 129 acts a centering springs. In col. 6, lines14-35, the interaction of the two springs on either side of the valve spool 92 is described as follows: "balancing of the springs forces is important in the design and operation of the embodiment ... illustrated in Figs. 4 and 5". For example, the spring force of the spring 116 should be 10 % greater than the combined spring forces of the centering spring 128 in the fully compressed state and the partially compressed spring 100 after full travel of the valve spool 92. The centering spring 128 is used to move the valve spool 92 to the right when the solenoid 112 is deactuated. The return stroke of the valve spool 92 is also balanced by the centering spring 129 (col. 6, lines 29-35). It is apparent that the arrangement of two springs on either side of the valve spool 92 is very important for proper operation of the device. The special configuration does not allow for a single spring arrangement on opposed ends of the valve spool; the device would not function. Thus, it is not obvious to replace the double spring arrangement

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on opposed piston ends of *Coleman* with a single spring as claimed in claim 5.

The secondary reference *U.S. 5,911, 245 (Weber)* is cited to show that a PE device is equivalent to a solenoid actuator. *Weber* shows a configuration where the pressure spring 39 only serves as a pretensioning element with which the piston 31 is forced into an end position. Therefore, this prior art reference does not show the possibility that a piezo element switches a piston by means of an interposed pressure spring.

Coleman in combination with *Weber* (piezo element used in place of solenoid) cannot provide a teaching leading to the present invention as claimed in claim 5. When using piezo elements instead of the solenoids of *Coleman*, nothing would change in regard to the valve configuration according to *Coleman* and nothing would change with regard to the required interaction of the springs 100, 128; 116, 129.

In view of the above, claim 5 is not obvious in view of *Coleman* and *Weber*. Reconsideration and withdrawal of the rejection of the claims pursuant to 35 USC 103 are therefore respectfully requested.

CONCLUSION

In view of the foregoing, it is submitted that this application is now in condition for allowance and such allowance is respectfully solicited. Should the Examiner have any further objections or suggestions, the undersigned would appreciate a phone call or e-mail from the examiner to discuss appropriate amendments to place the application into condition for allowance.

Authorization is herewith given to charge any fees or shortages in any fees required during prosecution of this application and not paid by other means to PTO deposit account 501199.

Respectfully submitted on August 11, 2005,


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